

IN THE CLAIMS

Please cancel claims 166 and 168 without prejudice.

Please amend claims 87, 106, 155, 159, 167, and 169 as indicated below.

Presented below are the amended claims in a clean-unmarked format. All of the claims pending in this application are set forth for the convenience of the Examiner. A version with markings to show changes made is set forth as an appendix to this Amendment.

1. – 86. (Cancelled).

87. (Five Times Amended) An electrical interconnection component comprising:

a resilient elongate element having a first end which is non-releasably fixed to a substrate and a second end which is free, said second end being a freestanding end; and  
a contact tip structure structurally distinct from said resilient elongate element, wherein said second end of said resilient elongate element is bonded to said contact tip structure.

88. (Amended) The interconnection component, according to claim 87 wherein:

the contact tip structure is formed with at least one pointed feature.

89. The interconnection component, according to claim 87 wherein:

the contact tip structure comprises multiple metallic layers.

90. (Amended) The interconnection component, according to claim 87 wherein:

the contact tip structure is integral with a cantilevered interconnect structure.

91. (Amended) The interconnection component, according to claim 87 wherein:

the interconnection element has a core element and a shell on the core element.

92. – 94. (Cancelled).

95. (Twice Amended) The interconnection component, according to claim 87 wherein:  
said resilient elongate element comprises a core element, and wherein the core element  
has a diameter in the range of from 0.25 to 10 mils.
96. (Twice Amended) The interconnection component, according to claim 87 wherein:  
said resilient elongate element comprises a core element, and wherein the core element  
has a diameter in the range of from 0.5 to 3 mils.
97. (Twice Amended) The interconnection component, according to claim 87 wherein:  
said resilient elongate element comprises a core element, and wherein the core element  
has a length in the range of from 10 mils to 500 mils.
98. (Twice Amended) The interconnection component, according to claim 87 wherein:  
said resilient elongate element comprises a shell, and wherein the shell has at least one  
layer which comprises a material which is selected for its ability to provide  
mechanical properties selected from the group consisting of spring properties,  
resiliency yield strength and compliance for the resilient elongate element.
99. The interconnection component, according to claim 98 wherein:  
the shell has at least one layer which comprises a material which has a yield strength  
of at least thirty thousand pounds per square inch.
100. The interconnection component, according to claim 98 wherein:

the shell has at least one layer which comprises a material which has a tensile strength in excess of 80,000 pounds per square inch.

101. (Twice Amended) The interconnection component, according to claim 87 wherein:  
said resilient elongate element comprises a shell, and wherein the shell has at least one layer which comprises a material selected from the group consisting of nickel, iron, and cobalt.
102. (Twice Amended) The interconnection component according to claim 87 wherein:  
said resilient elongate element comprises a shell, and wherein the shell has at least one layer which comprises a material selected from the group consisting of copper, nickel, cobalt, tin, boron, phosphorous, chromium, tungsten, molybdenum, bismuth, indium, cesium, antimony, gold, silver, rhodium, palladium, platinum, lead, and ruthenium.
103. (Twice Amended) The interconnection component, according to claim 87 wherein:  
said resilient elongate element comprises a core element and a shell, and wherein the core element comprises gold and the shell comprises a material selected from the group consisting of nickel and cobalt.
104. The interconnection component, according to claim 91 wherein:  
the shell has a thickness in the range of from 0.20 mils to 20 mils.
105. The interconnection component, according to claim 91 wherein:  
the shell has a thickness in the range of from 0.25 to 10 mils.
106. (Five Times Amended) An electronics assembly comprising:

a substrate;  
a resilient elongate element having a first end secured to the substrate; and  
a contact tip structure, structurally distinct from said resilient elongate element, a second end of said resilient elongate element being bonded to said contact tip structure, wherein said second end of the said resilient elongate element is a freestanding end.

107. (Twice Amended) The electronics assembly, according to claim 106 further comprising:  
a plurality of resilient elongate elements, each having a first end secured to the substrate; and a plurality of contact tip structures, each secured to a respective end of the respective resilient elongate element opposing a respective first end thereof.

108. (Twice Amended) The electronics assembly, according to claim 106 wherein: the contact tip structure is separately fabricated and mounted to the resilient elongate element.

109. (Twice Amended) The electronic assembly, according to claim 108 wherein: the resilient elongate element has a relatively flexible core element and a layer on the relatively flexible core element.

110. (Twice Amended) The electronic assembly, according to claim 108 wherein: the resilient elongate element has a relatively flexible core and a layer, on the relatively flexible core element, of a material selected from the group consisting of nickel, an alloy of nickel, cobalt, an alloy of cobalt and an alloy of nickel and cobalt.

111. The electronic assembly according to claim 110 wherein:  
the relatively flexible core element comprises gold.
112. (Twice Amended) The electronics assembly, according to claim 106 wherein:  
the resilient elongate element has a core element and a shell, and wherein the core element is readily-shaped and comprises a material selected from the group consisting of:
  - (a) gold, aluminum and copper with small amounts of beryllium, cadmium, silicon and magnesium, and
  - (b) metals of the platinum group, and
  - (c) lead, tin, and indium.
113. (Twice Amended) The electronics assembly, according to claim 109 wherein:  
the layer comprises a material which is selected for its ability to provide mechanical properties selected from the group consisting of spring properties, resiliency yield strength and compliance for the resilient elongate element.
114. The electronics assembly, according to claim 109 wherein:  
the first end of the relatively flexible core element forms a first intimate bond with a conductive contact terminal carried by an electronic component; and  
the layer forms a second intimate bond with at least a portion of the conductive contact terminal immediately adjacent the first intimate bond.
115. – 153. (Cancelled).

154. The electrical interconnection component of claim 87, wherein said contact tip structure comprises a pad.

155. (Amended) The electrical interconnection component of claim 154, wherein said second end of said resilient elongate element is bonded to a surface of said pad.

156. The electrical interconnection component of claim 155, wherein an opposite surface of said pad comprises at least one projection.

157. The electrical interconnection component of claim 156, wherein said opposite surface of said pad comprises a plurality of projections.

158. The electrical interconnection component of claim 154, wherein said pad comprises a plurality of layers of materials.

159. (Amended) The electrical interconnection component of claim 87, wherein said resilient elongate element comprises a wire, and said second end of said resilient elongate element is wire bonded to said contact tip structure.

160. The electronics assembly of claim 106, wherein said contact tip structure comprises a pad.

161. The electronics assembly of claim 160, wherein said second end of said resilient elongate element is bonded to a surface of said pad.

162. The electronics assembly of claim 161, wherein an opposite surface of said pad comprises at least one projection.

163. The electronics assembly of claim 162, wherein said opposite surface of said pad comprises a plurality of projections.

164. The electronics assembly of claim 160, wherein said pad comprises a plurality of layers of materials.

165. The electronics assembly of claim 106, wherein said resilient elongate element comprises a wire, and said second end of said resilient elongate element is wire bonded to said contact tip structure.

166. (Cancelled).

167. (Amended) The electronic interconnection component of claim 87, wherein said contact tip structure is non-releasably secured only to another element when the resilient elongate element is conducting current as an electrical interconnection.

168. (Cancelled).

169. (Amended) The electronic assembly of claim 106, wherein said contact tip structure is non-releasably secured only to another element when the resilient elongate element is conducting current as an electrical interconnection.